

# MCA Practice Problems Worksheet #6

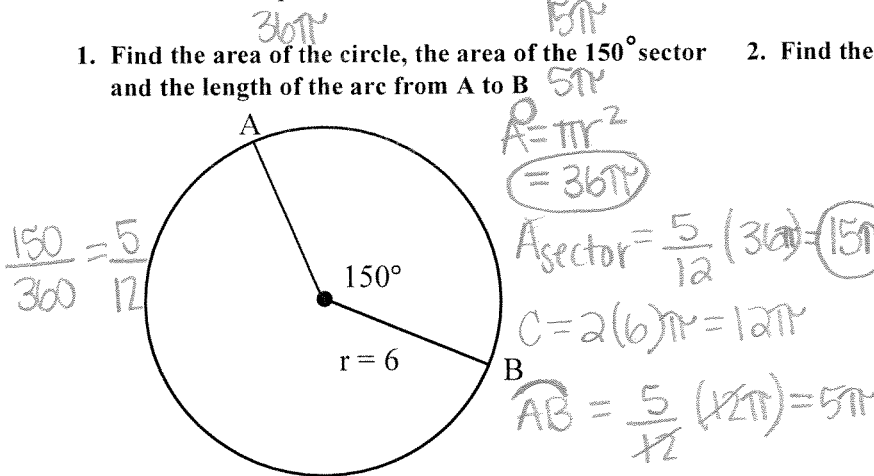
(geometry)

key

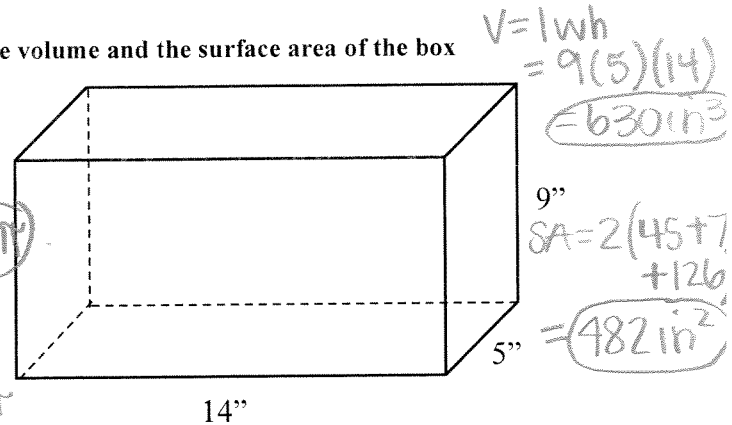
Name \_\_\_\_\_

Solve the various problems

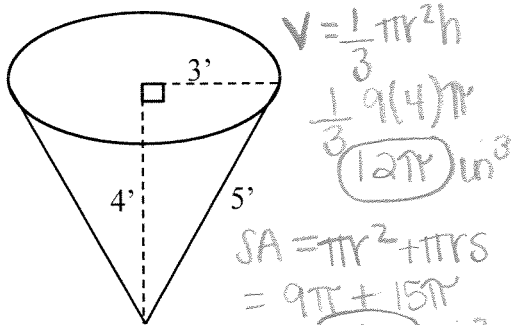
1. Find the area of the circle, the area of the  $150^\circ$  sector and the length of the arc from A to B



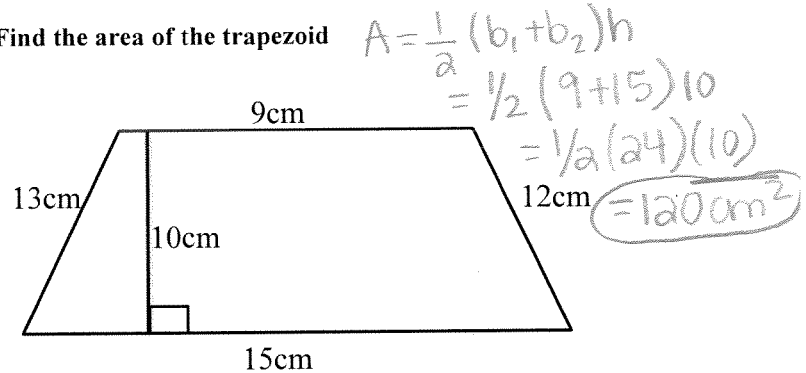
2. Find the volume and the surface area of the box



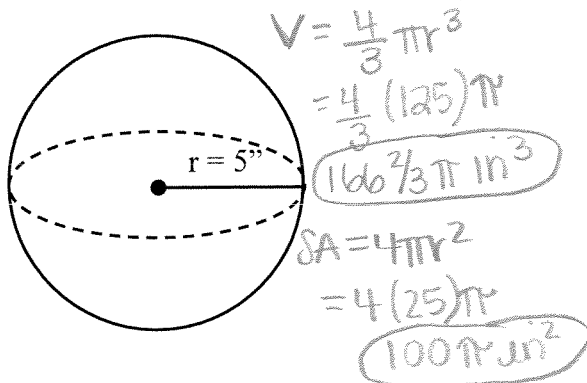
3. Find the volume and the surface area of the cone



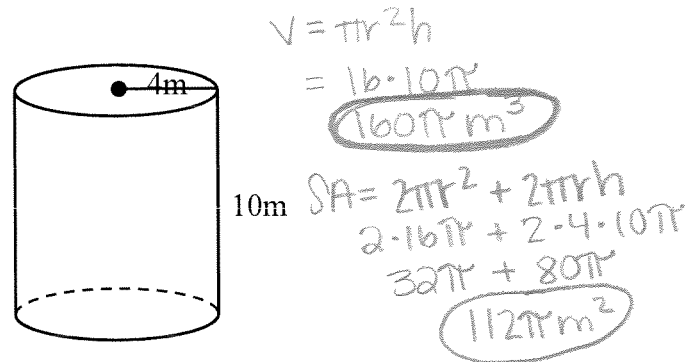
4. Find the area of the trapezoid



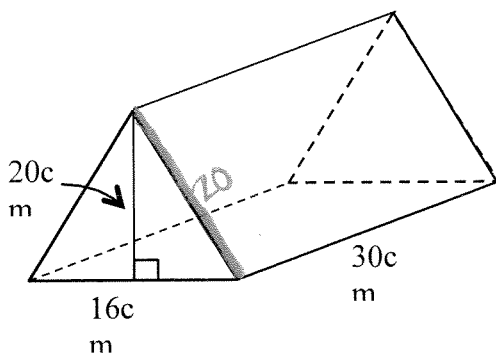
5. Find the volume and surface area of the sphere



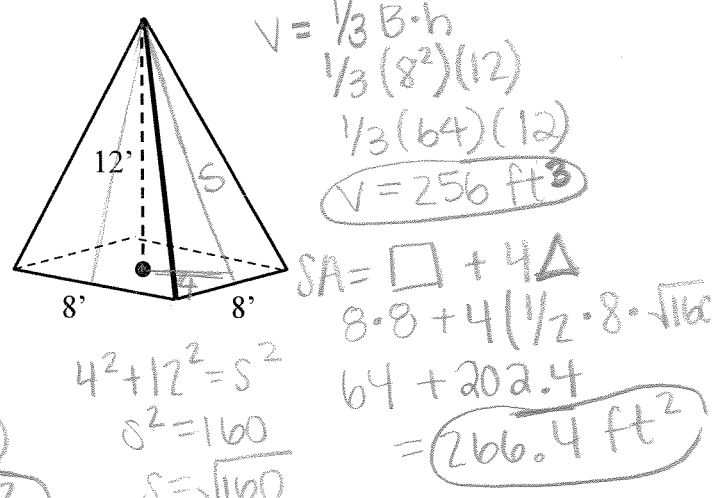
6. Find the volume and surface area of the cylinder



7. Find the surface area and volume of the prism



8. Find the volume and the surface area of the pyramid



9. A 25-foot ladder is leaning against a building. The base of the ladder is 7 feet from the base of the building. How high up the building does the ladder reach?

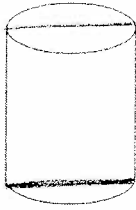


$$7^2 + x^2 = 25^2$$

$$x^2 = 576$$

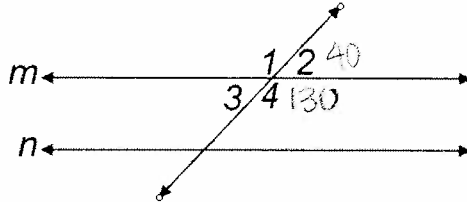
$$x = \sqrt{576} = 24 \text{ ft}$$

10. What shape does the vertical cross section of the figure below create?



- a. circle
- b. cylinder
- ☒ c. rectangle
- d. oval

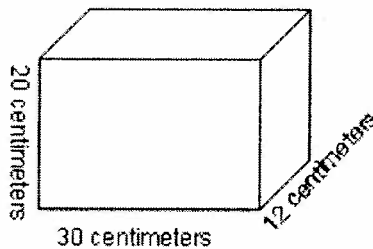
11. In the figure below, the measure of  $\angle 4$  is  $130^\circ$ . What is the sum of the measures of  $\angle 2$  and  $\angle 3$ ?



- a.  $50^\circ$
- b.  $60^\circ$
- ☒ c.  $80^\circ$
- d.  $100^\circ$

$$40 + 40 = 80$$

12. Emily needs to make a glass case with the following measurements:



$$SA = 2(12 \cdot 30 + 12 \cdot 20 + 30 \cdot 20)$$

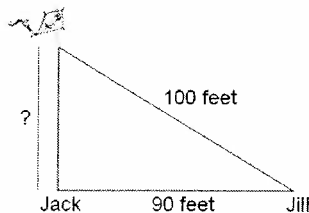
$$= 2(1200)$$

$$= 2400$$

How many square centimeters would it take to construct the case enclosed on all sides?

- a. 612 square centimeters
- ☒ b. 2,400 square centimeters
- c. 6,200 square centimeters
- d. 7,200 square centimeters

13. Jill is flying a kite on 100 feet of string. She holds the end of the kite string to the ground while Jack measures the distance to a point directly under the kite. If the distance from Jill to Jack is 90 feet, how high is the kite above the ground? Answer to the nearest whole foot.



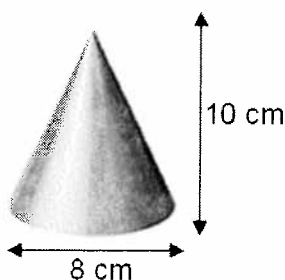
- a. 40 feet
- b. 42 feet
- ☒ c. 44 feet
- d. 46 feet

$$90^2 + x^2 = 100^2$$

$$\sqrt{x^2} = \sqrt{100^2 - 90^2}$$

$$x = 43.6$$

14. The cone below has a base with diameter of 8 cm and height of 10 cm.



Use the formula  $V = \frac{1}{3}\pi r^2 h$  to find the volume of the cone to the nearest cubic centimeter.

$$(\pi \approx 3.14)$$

- a.  $42 \text{ cm}^3$
- ☒ b.  $167 \text{ cm}^3$
- c.  $503 \text{ cm}^3$
- d.  $670 \text{ cm}^3$

$$\frac{1}{3}\pi(4^2)(10)$$

$$\frac{1}{3} \cdot 160\pi$$

$$V = 167.5 \text{ cm}^3$$